

REMARKS:

Claims 1, 2, 3, 4, and 6-12 are in the case.

Claims 1, 3, 4, 6, 7 and 8 have been considered. The withdrawn claims 9-12 are retained since it is believed the examiner should consider these claims as well, for the reasons that will be set forth in detail later in these remarks.

Claims 1, 3, 4, 6, 7 and 8 have been rejected as being obvious from the combination of Japanese publication number 08-186064 to Hanada, taken in view of U.S. patent 6,177,023 to Shang et al. and either U.S. patent 5,210,466 to Collins et al. or U.S. patent 6,199,505 to Sato et al.

Stated generally, the Examiner holds that firstly, from Shang, the person of ordinary skill in this art would be motivated to scale a reactor made by a combination of Hanada with either Collins or Sato, up to the reactor claimed by the present inventor; and secondly, the standing wave limitation is neither present in the claims nor a true structural limitation.

Turning to the Final Action at page 7, paragraph 5, the Examiner holds that scaling up or down is obvious for the combination of Hanada with either Collins or Sato, since Shang "teaches" that any scale up or down can be made.

This statement of Shang is not a "teaching" in its correct sense, since Shang does not take into account any technical limits or newly arising problems. Shang's statement is likely made to broaden his range of equivalents for patent purposes and the person of ordinary skill in the art would understand that many more criterion must be taken into account before arbitrarily increasing the size of a structure, especially one as critical as a reactor of the type claimed.

To make an illustrative comparison, consider a standard car designed for carrying

four persons. If the auto manufacturer wants a car with larger capacity, can it simply "scale up" as the Examiner suggests?

Is it enough to just add a further bench and make the car broader and longer? Will you find that regular tires won't carry the load, regular brakes will not make the car stop, you need a larger engine and you have to add stability to the car itself. Is such a scale up truly automatic (i.e. obvious) and will it result in the creation of a bus?

The answer is clearly no.

One surely cannot simply broaden a car because it won't fit the width of the streets. Moreover, a simple scale up would imply using dozens of doors. On the contrary, rather than a simple scale up, a new concept of entering and exiting the vehicle is needed. By "just scaled up" one encounters many obstacles.

Therefore it is believed that the Examiner is using hindsight based on the comments of Shang about scale up/down, which those skilled in the art will certainly not be motivated to apply blindly while neglecting the fact that by linearly scaling up, problems may come to existence non-linearly (stepwise).

In the present case, one may scale up a small reactor for wafer handling and it will work, until suddenly the standing waves will establish, based on the physical properties of the reactor. Even if one expects this phenomenon to occur, this does not automatically imply the solution defined in the claims.

Turning to the Final Action on page 8, paragraph 6, stating that the claims do not include the standing wave effect, and that a functional feature may be inappropriate for an apparatus claim, the amendment to claim 1 has been drafted to insure that it, in fact, defined a structural limitation, namely the size of the process space.

This feature can be derived from, and is supported by the specification at page 2, lines 15-17, introducing the standing wave problem, and page 4, lines 23-27, identifying the solution.

As emphasized previously during the prosecution of this application, none of the cited prior art has reactor sizes and frequencies, which, in combination, show this feature. The size limitation of the process space is definitely structural and the wording chosen allows the person skilled in the art to calculate or measure the respective size using only knowledge that is readily available to those with ordinary skill in this art.

Claims 2 and 9-12 further limit the scope of the invention so that these claims too should now be rejoined with the application. Claim 2 has been amended to further limit claim 1.

All of the claims are therefore believed to be in condition for allowance.

The examiner is respectfully urged to telephone the undersigned in the interest of reaching a conclusion to the prosecution of this case.

Respectfully submitted,



Peter C. Michalos
Reg. No. 28,643
Attorney for Applicants
(845) 359-7700

Dated: August 16, 2005

NOTARO & MICHALOS P.C.
100 Dutch Hill Road, Suite 110
Orangeburg, New York 10962-2100
Customer No. 21706

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